CLAIMS

1. A novel crystal of 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer), characterized in that it exhibits peaks at diffraction angles shown in the following Table 1, in its powder X ray diffraction pattern:

Table 1

Diffraction Angle 2θ (°)
approximately 11.7
approximately 16.1
approximately 18.6
approximately 21.2
approximately 22.3
approximately 24.4
approximately 26.2

2. The novel crystal of 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer) according to Claim 1, obtained by crystallization in an acidic state of a solution containing 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer) in a temperature range of -5°C to 5°C.

3. The novel crystal of 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer) according to Claim 1 or 2, wherein the solution containing 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer) is an aqueous solution of an alkali metal salt of the compound.

4. The novel crystal of 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer) according to any of Claims 1 to 3, obtained by controlling pH of an aqueous sodium hydrogen carbonate solution of 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer) at from 1 to 3 while cooling the solution in a temperature range from -5°C to 5°C.

5. A method for preparing a novel crystal of 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer), comprising acidifying a solution containing 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer) in a temperature range from -5°C to 5°C to cause formation of a crystal.

6. The method for preparing a novel crystal of 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer) according to Claim 5, wherein the acidic state of the solution includes pH values of 1 to 3.

7. The method for preparing a novel crystal of 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer) according to Claim 5 or 6, wherein the solution containing 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer) is an aqueous solution of an alkali metal salt of the compound.

8. The method for preparing a novel crystal of 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer) according to any of Claims 5 to 7, wherein the temperature of the solution under an acidic state is 0°C to 2°C.

9. A method for preparing an anhydrous form of a novel crystal of 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer), wherein a novel crystal obtained by the method according to any of Claims 5 to 8 is further frozen at temperatures from -5°C to -80°C, and then subjected to vacuum drying.

10. The method for preparing an anhydrous form of a novel crystal of 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl-3-cephem-4-carboxylic acid (syn isomer) according to Claim 9, wherein the conditions for vacuum drying include a degree of vacuum of 0.1 to 0.001 mmHg and a temperature of -20 to 35°C.